

Date: Tuesday, 1/31/2006 1:12:09 PM
 Ser: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : SKIDTUBE
 Job Number : 25691A
 Estimate Number : 11546
 P.O. Number : N/A Part Number : D204635041
 This Issue : 1/31/2006 S.O. No. : N/A Drawing Number : D2590 REV C
 Prsht Rev. : NC Project Number : N/A
 First Issue : N/A Type : LANDING GEAR Drawing Revision : C
 Previous Run : 25690A Material : N/A
 Due Date : 2/20/2006 Qty: 1 Um: Each
 Written By : SEK COMMENT BELOW
 Checked & Approved By : 06.01.31
 Comment : Est Rev: 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D25001190 Ex'tn -1' Beam Tube 4"



Comment: Qty.: 1.0400 Each(s)/Unit Total: 1.0400 Each(s)

Pick:

Qty Part Number Description Batch
 1 D2500-1-190 Skid Tube Extrusion B21778 a.m 06-02-06 ①

2.0 D2597 204 Web



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch
 1 D2597 204 Web B25698 p.m 06-02-08 ①

3.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Inspect mat'l D2500-1-190 for damage a.m 06-02-06 ①

2-Cut D2500-1-190 per Dwg D2590 if necessary Deburr ends a.m 06-02-06 ①

3-Drill pilot holes using drill jig DT 8149 & DT8711-1&2 a.m 06-02-06 ①

4-Acid etch and Alodine tube per QSI 005 4.1 a.m 06-02-07 ①

5-Open holes to 0.500" as per Dwg D2590 without cutting fluid a.m 06-02-07 ①

6-Countersink holes as per Dwg D2590 without cutting fluid a.m 06-02-07 ①

7-Deburr and blow out all chips from inside of tube a.m 06-02-07 ①

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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QA: N/C Closed: _____ Date: _____

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Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 m19597

Sikaflex expire date: 06-06-18

Start Time: 1130

Fin Time: 10:15AM 06-3-1

Prm 06-02-08 (1)

4.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend as per program D2590.C on CNC Bender

DP06-3-1 (1)

5.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut tubes as per Dwg. D2590.

DP06-3-1 (1)

2-Deburr ends after cutting. Remove alodine from around holes

BE 06-03-1 (1)

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

06-03-06

7.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3 Step

B22141 BE 06-03-06 (1)

8.0

D2579

Crossbolt Spacer



Comment: Qty.: 17.0000 Each(s)/Unit Total: 17.0000 Each(s)

Pick:

Qty Part Number Description Batch

17 D2579 Spacers

B25138 BE 06-03-06 (1)

Dart Aerospace Ltd

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Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 Step Remove alodine as required.

BE 06-03-06 ①

2-Weld step D2576 as per Dwg. D2590 and QSI 004

A/R

Aluminum Rod

M19/00 BE 06-03-06 ①

3-Weld crossbolt spacers D2579 as per Dwg. D2590 and QSI 004. For D2579

spacers, weld one

side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R

Aluminum Rod

M19/00 BE 06-03-06 ①

4-Grind welds as per Dwg D2590 Grind flush ridge made from bending

BE 06-03-07 ①

5-Drill holes for wearplates using DT 8218 Open holes to 19/64", adjust stopper not to hit crosstubes. Deburr

BE 06-03-10 ①

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2590. Deburr holes

BE 06-03-10 ①

7-Drill pilot holes for aft cap using DT 8215 Open holes to #6 Drill bit. Deburr

BE 06-03-10 ①

8-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

BE 06-03-10 ①

10.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

Inspect weld and Counterbore work to Step 20

J 06-03-16
PD 06-03-16

11.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

A-M 06-05-26 ①

12.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

PL 06-05-30 ①

13.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty

Part Number

Description

Batch

B 25137

A-M 06-05-30

W/O:		WORK ORDER CHANGES						
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Drawing Name: SKIDTUBE

Job Number: 25691A

Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

1

D2577-1

Wearplate

B25137 /

14.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	<u>B25171</u> /

15.0

D25777

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-7	Wearplate	<u>B21607</u> /

16.0

ALS71032130

Insert



Comment: Qty.: 38.0000 Each(s)/Unit Total : 38.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
38	ALS7-1032-130	Inserts	<u>M14293</u> /

ALS4 1032-130

17.0

AN960JD10L

Washer



Comment: Qty.: 38.0000 Each(s)/Unit Total : 38.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
8	AN960JD10L	Inserts washer	<u>M18235</u> /

18.0

AN34A

Bolt



Comment: Qty.: 38.0000 Each(s)/Unit Total : 38.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
38	AN3-4A	Bolt	<u>M19310</u>

a.m 06-05-30

(1)

W/O:		WORK ORDER CHANGES							
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Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

D25941

Plug



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
10	D2594-1	Plug	D2462 /

20.0

D25943

O-Ring



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
10	D2594-3	O-Ring	D24104 /

21.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

B23925A /

22.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

M15205 /

23.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

M16235

A.M 06-05-30 (1)

24.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2590. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 M100901

Sikaflex expire date: 06-01-04

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

A.M 06-05-30 (1)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: DP Date: 06/06/07
 QA: N/C Closed: _____ Date: _____

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Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

4-Install 2855 Aft Cap as per Dwg D2590 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291

Sikaflex expire date: 06-14-06

5-Wing Walk as per Dwg D2590 and QSI 005 4.4

Batch:

100901
M400652

6-06-05-30

25.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024 FL 060602

26.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

SP 06/06/02

Job Completion



2 0606-06

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2590	REV. C SHEET 1 OF 2
DATE 98.08.28		TITLE 204 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.28	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED
98/09/11 DS

QTY	Part Number	Description
X	D2590-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2597	204 WEB
1	D2575	AFT CAP
1	D2576-3	STEP
17	D2579	CROSS BOLT SPACER
10	D2594-1	PLUG
10	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-7	WEARSHOE
38	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
40	AN3-4A	BOLT
40	AN960JD10L	WASHER

00.08.28
LP 00.08.28

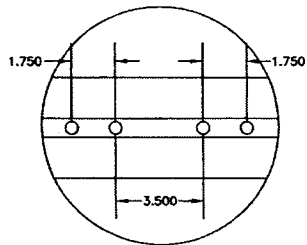
DEOS	
EFFECTIVE	98/12/14

GENERAL NOTES:

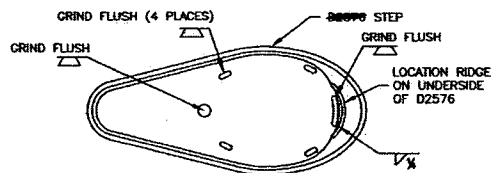
- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 169.5 INCHES *
- 3) INSERT D2597 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-204 TO LOCATE AND DRILL $\varnothing 0.297$ HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (38 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2597 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (10 PLACES).

STOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 25691A

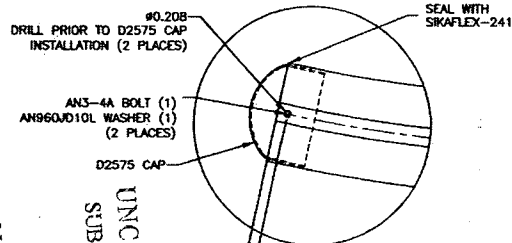
DETAIL A
SCALE 5:24



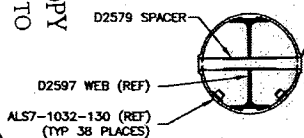
DETAIL B
SCALE 5:24



DETAIL C
SCALE 5:24

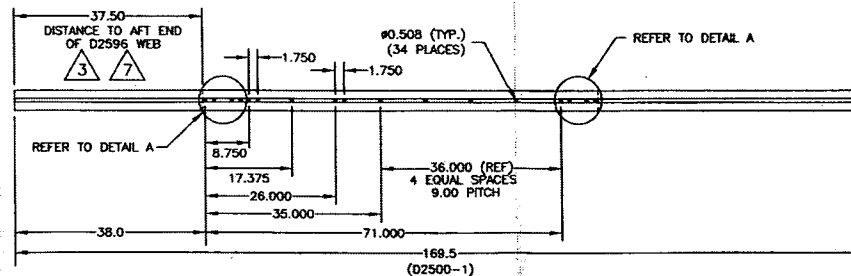


SECTION D-D
SCALE 5:24

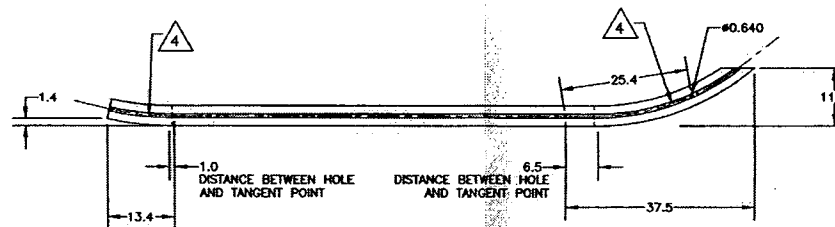


AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (17 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

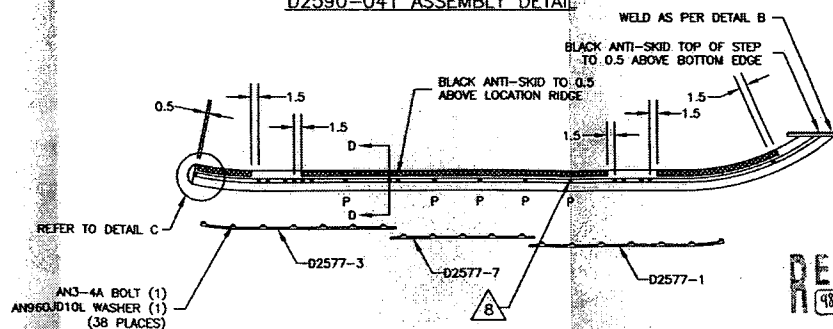
D2590-1 DRILLING DETAIL



D2590-1 BENDING AND CUTTING DETAIL



D2590-041 ASSEMBLY DETAIL



RELEASED
98/09/17 BS

DESIGN DART	DRAWN BY DART	DART DART AEROSPACE LTD WARRICKSURY, ONTARIO, CANADA
CHECKED DART	APPROVED DART	DRAWING NO. D2590
DATE 98.08.28		TITLE 204 SKIDTUBE ASSEMBLY
		REV. C SHEET 2 OF 2 SCALE 1:24

